



TIDEWATER PRESS

NEWSLETTER OF THE TIDEWATER
CHAPTER OF THE AMERICAN FISHERIES SOCIETY

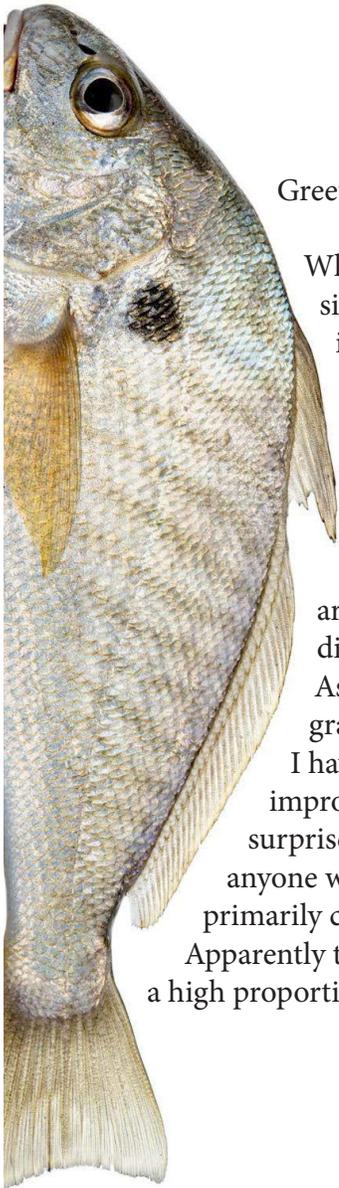
Fall 2019 Volume 34, Issue 2

AFS Tidewater Chapter President's Corner

Greetings Tidewaterologists!

When I became TWC president in January of this year, my goal was to increase the diversity of our membership. A starting point for that goal is to determine what our diversity is by developing a “diversity and inclusion scorecard”. To that end, I asked the attendees at the annual meeting to confidentially declare their ethnic, religious, and gender identity using Mentimeter software. The results of that exercise are found on the next page.

While there were more categories to choose from than shown here, and not all are exclusive, this is a general representation of TWC members (at least those who stuck around for the Saturday session). As expected, we are primarily white, straight, and traditionally religious. Maybe not so surprising is the preponderance of female members. As a fishery scientist with almost 40 years in this profession, I have observed the demographic change from mostly male to largely female. In fact, of the 16 graduate students I have advised, 11 of those were women and five were men. That's a good thing, and will improve when those women advance to managerial levels in the profession. I shouldn't be surprised (but I am, a bit) that many scientists are atheists. FSM was a joke, obviously, but anyone who worships the flying spaghetti monster must have a good sense of humor. But I am primarily concerned about the poor representation by African Americans and Native Americans. Apparently the Tidewater region is not a Native American population center, but we certainly have a high proportion of African Americans who are not represented in our profession or our society.



So what should be our goal? Increasing the diversity in our profession so that it mirrors the population or our country as a whole is a start. It will never be perfect, but we can certainly improve it relative to our current state. How do we do that? The best way is via personal interaction. I therefore challenge each of you to reach out to another student whose demographic is underrepresented in our society and invite them to join AFS and the Tidewater chapter. Our next meeting will be held in Hampton, VA, home to Hampton University, one of the finest minority universities in the country. I'm hoping we can draw some of their students and faculty into our meeting and our society. If you know any marine science students or faculty at Hampton University, please send them information about AFS and our upcoming meeting, and invite them to join us.

On another note, we are now beginning to plan for the 151st Annual Meeting of the American Fisheries Society in 2021, which will take place in Baltimore, MD. The TWC will have a central role in planning for the meeting and we need volunteers to undertake a variety of tasks for that meeting, and students can get paid for their efforts. Please contact me and let me know if you would be interested in helping out. I have a job for you!

As a closing remark, it is extremely important for TWC members to also be members of the parent society, and it would also be valuable for any local AFS members to become members of the Tidewater Chapter. If you are one but not the other, please make the effort to join both groups.

See you in Hampton!

Brad Stevens, President
Tidewater Chapter, American Fisheries Society

Religion	Count	%
Atheist	18	28%
Catholic	18	28%
Other	13	20%
Protestant	9	14%
Non-Prot Christian	2	3%
Jewish	2	3%
Hindu/Sikh	1	2%
FSM	1	2%
Total	66	

Gender	Count	%
Female	34	54%
Male	26	41%
Lesbian	1	2%
Non-binary	1	2%
Other	1	2%
Total	66	

Ethnicity	Count	%
White/N. European	53	80%
LatinX	5	8%
Asian	5	8%
Native American	2	3%
African-American	1	2%
Total	66	

Gallagher Awarded Eileen Setzler-Hamilton Memorial Scholarship

By Sara Mirabilio, chair, Awards and Scholarship Committee

The Eileen Setzler-Hamilton Memorial Scholarship is awarded to a graduate student currently enrolled in a fisheries science or closely related curriculum who has displayed a commitment to excellence in research, teaching, professional undertakings, public education, and community service. This award was created in 2003 to remember Dr. Eileen Setzler-Hamilton, a long-time member of the American Fisheries Society (AFS) and fourth president (1989) of the Tidewater Chapter. This award really is about a “coastal scientist enthusiast” who passionately engages with other students and the public out of the beauty they feel privileged to witness each day in the field. That was Eileen. Recipients receive a certificate and a \$600 scholarship. The award is presented at the Chapter annual meeting.

The 2019 “Eileen Award” was presented to Riley Gallagher, a master’s student at North Carolina State University at the chapter business meeting held late afternoon on February 8, 2019. Under the advisement of Jeff Buckel, he is investigating cobia stock structure and population dynamics in North Carolina and Virginia.



Photo credit: John Cooper

Awards and Scholarship Committee chair, Sara Mirabilio, presents Riley Gallagher with the 2019 Eileen Setzler-Hamilton Memorial Scholarship at the American Fisheries Society Tidewater Chapter business meeting held the afternoon of Feb. 8, 2019 at Salisbury University, Maryland.

The University of Montana Student Subunit September 2010 meeting marked Riley’s first introduction to the AFS. He currently is involved with the NC State University Student Fisheries Society and shared presidential duties in 2018. In this leadership role, he was able to develop several outreach and public service activities, such as Shad in the Classroom in partnership with the N.C. Museum of Natural Sciences, and stream cleanups around campus with assistance from the nonprofit Service Raleigh. He presented his research at a Science Café for kids in March. And, I would be remiss if I didn’t mention his assistance in helping Paul Rudershausen, past-president, pull off the 2018 chapter meeting in North Carolina.

Riley’s application could be summed up best by one of his reference’s comments: “Riley is a very approachable person who strives to find effective ways to communicate with all age groups and levels of understanding of the scientific process...he is truly the perfect graduate student that encompasses what this award stands for.”

The Awards and Scholarship Committee soon will be accepting applications for the Eileen Setzler-Hamilton Memorial Scholarship. Look for an announcement in October. Application instructions and forms for the Eileen Setzler-Hamilton Memorial Scholarship will be available for download from the Chapter website: www.tidewater-afs.org.

For questions or concerns, contact me at 252-475-5488 or semirabi@ncsu.edu.

NORTH CAROLINA



Jacob Boyd - Section Chief
Habitat and Enhancement
NC Division of Marine Fisheries

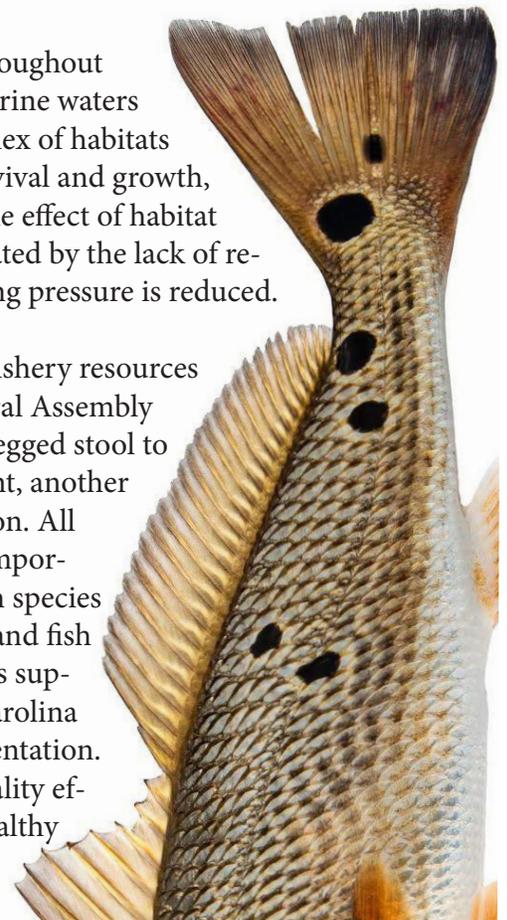
With over 2.5 million acres of estuarine waters, North Carolina's Albemarle-Pamlico estuary is the second largest in the continental U.S. These waters support a high diversity of aquatic species and six distinct, but interdependent, coastal habitats. Habitat can be thought of in very general terms or very complex ones. For example, a certain fish's habitat may be described simply as "saltwater" or as complex as areas where the water has a salt concentration greater than 30 parts per thousand, a water depth less than 10 feet, a water temperature between 24 and 32 degrees Celsius, and where vegetation covers more than 75 percent of the substrate.

North Carolina's Coastal Habitat Protection Plan (CHPP) breaks fish habitat into six groups known to be home to important fisheries species at many points in their life: hard bottom, soft bottom, shell bottom, submerged aquatic vegetation (SAV), water column, and wetlands. These habitats represent areas where coastal fishery species forage, seek refuge, grow, and spawn.



With numerous fish migrating throughout North Carolina's estuarine and marine waters throughout their lifecycle, a complex of habitats must be maintained to ensure survival and growth, from the headwaters to the sea. The effect of habitat loss and degradation can be indicated by the lack of recovery of certain stocks after fishing pressure is reduced.

Due to concerns about declining fishery resources in North Carolina, the N.C. General Assembly passed the Fisheries Reform Act in 1997. The law is described as a three-legged stool to support healthy fisheries. One leg of the law addresses fishery management, another leg addresses habitat loss, and the third addresses water quality degradation. All three legs are needed to sustain coastal fisheries. The law recognizes the importance of having sufficient quantity of quality coastal habitat to support fish species throughout their life history. Because of the relationship between habitat and fish populations, the law contains the directive to protect and enhance habitats supporting coastal fisheries through the creation of the CHPP. The North Carolina Division of Marine Fisheries protects fish habitat through CHPP implementation. The CHPP is the guidance document that addresses habitat and water quality efforts needed to protect, enhance and restore fish habitat to help ensure healthy fisheries in North Carolina. The initial plan was completed in 2005 and is reviewed and updated on a five-year cycle. In addition to providing a



home for fish, coastal habitats such as wetlands and oyster reefs increase the resilience of coastal areas to climate change and sea level rise and improve water quality. The CHPP provides the science needed to inform management and summarizes the economic and ecological value of coastal fish habitats to North Carolina, their status, and the potential threats to their sustainability. The protection of these areas is critical to the protection and endurance of North Carolina's fishery resources and the ways of life they support. North Carolina has a diversity of marine habitat which is crucial to its coastal fisheries and habitat loss and degradation can make fish stocks more susceptible to decline.



1) WETLANDS: border vital nursery areas, export food, remove pollutants and are a buffer between water and land-based impacts.



2) SOFT BOTTOM: stores and regulates nutrients, and chemicals, and provides crucial foraging areas for fish.



3) SHELL BOTTOM: fish spawning and nursery area, improve water quality, and protect nearby shorelines from erosion.



4) SUBMERGED AQUATIC VEGETATION: provides refuge and food for small fish and invertebrates, improves water quality.



5) HARD BOTTOM: complex structure, often covered by living organisms, supports a temperate-subtropical reef fish community and snapper-grouper fishery.



6) WATER COLUMN: the basic habitat and the medium through which all other fish habitats are connected.

VIRGINIA



Cobia (*Rachycentron canadum*) is an important recreational fishery all along the entire eastern seaboard and in Gulf of Mexico. In the Chesapeake Bay, where it comes to spawn during the summer, this fish is especially sought after for its impressive fight and tasty filets. Unfortunately, in recent years, Cobia have been listed as overfished along the Atlantic and more strict management measures have been put in place. But overfishing may not be the only threat to healthy Cobia stocks.

Climate change is affecting bodies of water and ecosystems all over the world, and the Chesapeake Bay is no different. Overall temperature in the Bay has been increasing over at least the last 50 years, and this increase is expected to continue through the

end of the century. Temperature drives many processes within the Bay including phytoplankton production, layering of the water column, and oxygen solubility in the water. Changes in all of these processes leads to changes in the amount of hypoxic (low oxygen) water in the Bay. We expect that as temperature increases, hypoxia will worsen. As climate change persists it is important to identify what species may be “winners” (i.e., able to handle an increase in temperature and hypoxia) or “losers” (i.e., unable to handle the changing environment and becoming locally extinct).

Dan Crear, a PhD student at the Virginia Institute of Marine Science (VIMS), is trying to determine if one of Virginia’s top recreational fish species will be a “winner” or “loser” under climate change. Crear is using a combination of physiological experiments and tagging studies to understand what environmental conditions Cobia prefer or may want to avoid.

Fortunately for Cobia, his findings seem to indicate that Cobia are tolerant of high temperature and hypoxia, an impressive and unusual ability for a species that makes seasonal migrations and spends time in pelagic waters. These high tolerances may be a widespread adaptation for Chesapeake Bay species, as some of the Cobia’s favorite prey items, including blue crabs and croaker also have a high tolerance to hypoxia.



Although this

study is still ongoing, it appears that Cobia will be able to handle the predicted environmental changes in the Bay associated with climate change and will most likely be a “winner”. Additional stress though, such as that associated with catch and release fishing, may negatively impact Cobia’s ability to handle extreme temperatures and oxygen levels, which could be important to consider when thinking about best practices.

Crear plans to use these data to create a predictive habitat model to understand changes in the volume of Cobia habitat in the Bay, which may relate to spawning success. He also plans to use this model to predict the timing of Cobia migration along the east coast, which has implications for state-by-state catch limits. These results will help managers set regulations and inform the stock structure of Cobia along the east coast, with the overall goal of keeping the Cobia fishery sustainable.



Photo credit: Aileen Devlin, VA Sea Grant

2018 Tidewater Chapter Special Recognition Awards

By Sara Mirabilio, chair, Awards and Scholarship Committee



Photo credit: John Cooper

Mirabilio presents Roman Jesien and Katherine Phillips with the 2018 Conservation Award to the Maryland Coastal Bays Program.

Chapter deems has accomplished notable fisheries or habitat conservation activities. This past year's award went to the Maryland Coastal Bays Program – 1 of 28 programs with the National Estuary Program. Roman Jesien and Katherine Phillips received the award on behalf of the program.

Sponsored by the U.S. Environmental Protection Agency, since 1987 the program has encouraged cooperation between residents, municipalities, and state and federal agencies to conserve and manage the water quality in the watershed of Maryland's five coastal bays. The program provides a platform to encourage meaningful discussions on the importance of development, farming, commercial fishing, and tourism in the watershed.

Mike Wilberg, a fisheries science professor at the University of Maryland Center for Environmental Science's Chesapeake Biological Laboratory (CBL), was the recipient of the 2018 Excellence in Fisheries Education Award. The award is given to an individual who has achieved excellence in teaching and student advising in the field of fisheries science or closely related curriculum and who also encourages student participation in American Fisheries Society, Tidewater Chapter, and other fisheries-related meetings.

Mike's first introduction to salty fisheries issues was when he moved to CBL in 2006 and began working on American eels and Atlantic menhaden. Since that time, he and researchers in his lab have studied a wide range of species including eastern oysters, blue crabs, Summer Flounder, Sea Lamprey, King Mackerel, and Yellow Perch. Mike has been a member of AFS since 1995, and he also served on AFS's Publications Overview Committee and the Scientific and was the Tidewater Chapter president in 2013. Outside of AFS, Mike was a member of the Statistical Committee of the Mid-Atlantic Fisheries Management Council.

One of his nominators wrote, "Mike Wilberg was probably the best graduate advisor I could have hoped for. His

Each year, the American Fisheries Society (AFS) Tidewater Chapter chooses to honor professionals or conservation organizations making a significant impact to the chapter or to the field of marine fisheries science by and large. Three special recognition awards are available for presenting at the chapter annual meeting: Excellence in Fisheries Education, Meritorious Service, and Conservation. The Awards and Scholarship Committee made two award presentations during the chapter annual meeting, one to the Maryland Coastal Bays Program and the other to Dr. Mike Wilberg. The business meeting was held late afternoon on February 8, 2019 at Salisbury University, Maryland.

The Conservation Award is given to an individual, resource management agency, business, or nonprofit organization that the

Chapter deems has accomplished notable fisheries or habitat conservation activities. This past year's award went to

intelligent, disciplined, and critical approach to fisheries science, and his genuine compassion for students and peers have helped to shape me into the professional I always wanted to be.”

In other awards business, outgoing Tidewater Chapter President Paul Rudershausen, research scholar at North Carolina State University, officially inducted Brad Stevens as the 2019 President of the Chapter. The ceremony included the traditional “passing of the toadfish.”

Then, as his first presidential act, Stevens presented Past-President Rudershausen with the “gavel award” for his leadership of the chapter in 2018.



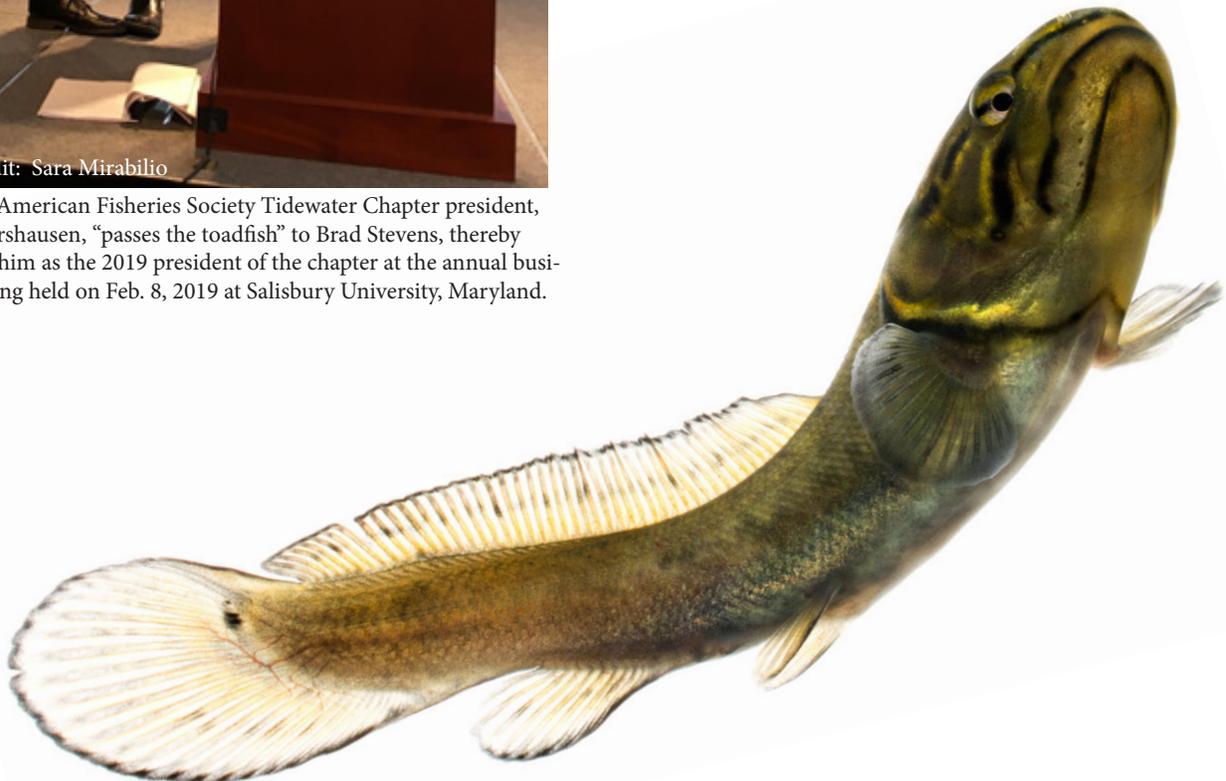
Photo credit: Sara Mirabilio

Outgoing American Fisheries Society Tidewater Chapter president, Paul Rudershausen, “passes the toadfish” to Brad Stevens, thereby inducting him as the 2019 president of the chapter at the annual business meeting held on Feb. 8, 2019 at Salisbury University, Maryland.



Photo credit: John Cooper

Awards and Scholarship Committee chair, Sara Mirabilio, presents Dr. Mike Wilberg with the 2018 Excellence in Fisheries Education Award.



Student Presentations Carry A Successful Chapter Annual Meeting

By Sara Mirabilio, chair, Awards and Scholarship Committee

Student presentations once again carried a successful American Fisheries Society (AFS) Tidewater Chapter annual meeting. A total of 32 presentations—18 posters and 14 oral presentations—were evaluated and scored by volunteer judges. Certificates and cash awards were presented during the awards banquet held the evening of Feb. 8, 2019 at Evolution Craft Brewing Company in Salisbury, Maryland.

In the poster category, the judges selected these winners:

-First Place: Lindsey Nelson, a master's student advised by Jan McDowell at the Virginia Institute of Marine Science / College of William & Mary's School of Marine Science, for her examination of the relationships of Clearnose (*Rostroraja eglanteria*) and Roundel skates (*R. texana*) using the ND2 mitochondrial gene.



Photo credit: John Cooper

Mirabilio presents Lindsey Nelson with the First-Place Student Poster Award during the awards banquet Friday evening at Evolution Craft Brewing Company in Salisbury, Maryland.

-Second Place: Apria Valenza, a Bachelor of Science Undergraduate at the University of North Carolina Wilmington (UNCW) for her honors research under Fred Scharf researching the ecophysiological response of juvenile Southern Flounder (*Paralichthys lethostigma*) growth to settlement habitat.

-Third Place: Judges could not decide between two deserving students in this category, so awards were given to both Kohma Arai and Spencer Gardner. Arai, a doctoral student in Dave Secor's lab at the University of Maryland Center for Environmental Science Chesapeake Biological Laboratory (UMCES CBL), presented his findings on sub-annual cohort representation in young-of-the-year juvenile recruits of the western Atlantic Bluefin Tuna (*Thunnus thynnus*) population. Gardner, a master's student under Scharf at UNCW, depicted the contribution of ontogenetic diet and habitat shifts to variable first-year growth in Southern Flounder (*Paralichthys lethostigma*).

Oral presenters were equally as talented, and in the student oral paper category, the judges selected these winners:

-First Place: Vaskar Nepal, a doctoral student advised by Mary Fabrizio at the Virginia Institute of Marine Science / College of William & Mary's School of Marine Science, presented further on his invasive Blue Catfish (*Ictalurus furcatus*) research, specifically the responses of the fish to variation in food resources.

-Second Place: Ella Rothermel, a master's student in Secor's lab at UMCES CBL, presented her second year of research on seasonal and environmental predictors of Striped Bass (*Morone saxatilis*) and Atlantic Sturgeon (*Acipenser oxyrinchus*) occurrences in the Maryland Wind Energy Area.



Photo credit: John Cooper

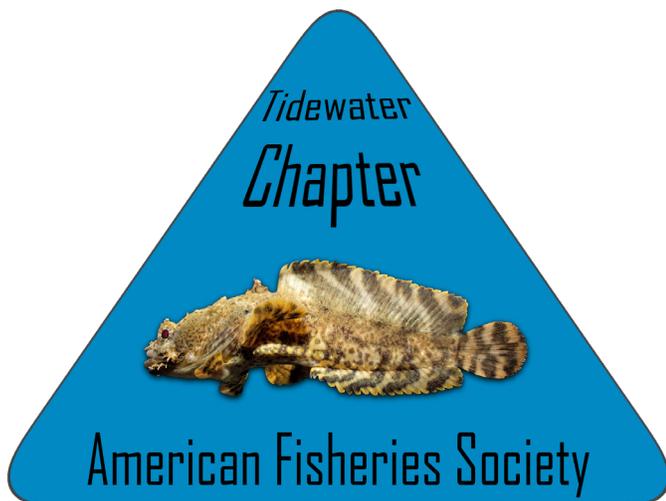
For the second year running, Mirabilio presents Vaskar Nepal, a doctoral student at the Virginia Institute of Marine Science / College of William & Mary's School of Marine Science, with the First-Place Oral Presentation Award.

-Third Place: Gail Schwieterman, a doctoral student advised by Rich Brill at the Virginia Institute of Marine Science / College of William & Mary's School of Marine Science, spoke about her analysis of elasmobranch blood samples in the field, specifically, validation of the Hemocue hemoglobin analyzer and blood stability during storage.

First-place prizes carry a cash value of \$200, followed by \$100 for second place, and third place offers a \$50 cash prize.

Of special mention this year, we had a student from James Madison High School in Vienna, Virginia present to the chapter about the TIA Alliance. This partnership is allowing high school students and conservation organizations, which includes AFS, to work together in natural resource conservation activities. Mary received an assortment of books and gift certificate to a local shop for her efforts.

A special "thank you," again, to all our volunteer judges!



Treasurer's Report – September 2019

Current Financial Report

Checking: \$21,255.29
Mutual Fund: \$ 1,990.04
Total: \$23,245.33

The current checking account balance includes \$646.95 payment from the AFS Parent Society for chapter dues paid during payment of society dues in 2019, \$708.00 for chapter dues from the Parent Society for the previous year (2018; the check got lost in the mail so been trying to rectify this for a while), \$111.24 payment to DotEasy for our website maintenance, and \$82.35 to Everweb to convert the website to a new format. We also cleared around \$1,300 from the Tidewater Annual Meeting in Salisbury, Maryland. A check for \$150 will be sent to purchase liability insurance, which is done every year to cover any accidents that may occur during our annual meeting. This check has not been deducted from the total checking amount.

Annual chapter dues for 2019 are \$10.00. If you are not currently a member of the Chapter but would like to join, a membership form can be found on the Chapter website or you can email me at: Stephanie.McInerny@ncdenr.gov

A lifetime membership is available for a one-time fee of \$150.00.

Checks should be sent to:

Stephanie McInerny
TWC Secretary/Treasurer
3441 Arendell Street
P.O. Box 769
Morehead City, NC 28557-0769

Make checks payable to "Tidewater Chapter AFS".

